

Mineral Industry Surveys

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TITANIUM IN THE FIRST QUARTER 1999

According to the U.S. Geological Survey (USGS), titanium mill product shipments in the first quarter were 5,370 metric tons, a 20% decrease compared with revised shipments from the previous quarter. Receipts of titanium scrap totaled 4,800 tons with 1,770 tons of home scrap and 3,034 tons of purchased scrap. Scrap receipts decreased 38% compared with those of the previous quarter.

Data for titanium metal products are developed by the USGS from a voluntary survey of domestic operations. Data for nonrespondents were estimated based on previously reported data. Please note that new and revised survey data generated a significant number of revisions in this report.

Ores and Concentrates

Phase 2 of Namakwa Sands project in South Africa is nearing completion. In February, Namakwa Sands Ltd. commissioned its second slag furnace. A mine expansion in the Vredendal/Lutzville region was expected to begin in April 1999, with full production reached by 2002. At full production, the expanded Namakwa operation is expected to produce up to 235,000 tons per year of titanium slag, 140,000 tons per year of zircon, and 42,000 tons per year of rutile (African Mineral Services, 1999a).

Because of declining ore grades, Richards Bay Minerals (RBM) is in the process of adding two heavy mineral separation plants to its mining operations in South Africa. The mining expansion will permit RBM to maintain a feedstock for its 1 million tons of titanium slag capacity. The project is reported to be approximately 60% complete and is expected to be commissioned by yearend (African Mineral Services, 1999b).

At Intertech Corp.'s TiO₂ '99 conference held on April 14 to 16, Westralian Sands announced the newly merged businesses of Westralian Sands Ltd. and RGC Ltd. will be called Iluka Resources Inc. Iluka is a township at the mouth of the Clarence river. The location is one of Australia's early titanium mineral discoveries.

Titan Mining LLC announced the discovery of a titanium deposit in New Mexico. According to the company, preliminary reserve calculations indicate a 232-million-ton ore body ranging from 1% to 10% TiO₂. Beneficiation testing produced an 50.2% ilmenite concentrate. The project is currently completing detailed drilling and

exploration (Titan Mining LLC, 1999).

Metal

In April, RMI Titanium Co. announced a labor agreement was reached with United Steelworkers of America covering the hourly workers at its Niles, OH, plant. A work stoppage had commenced on October 1, 1998. During the strike, titanium ingot and mill product operations were being conducted by salaried personnel. The new contract was for a 4-1/2 year period. (RTI International Metals Inc., 1999).

In March, the Defense National Stockpile Center issued a new invitation for bids for the sale of approximately 5,000 tons of titanium sponge held in the Government stockpile. Unlike previous negotiated offerings, the new offering will be on a sealed-bid basis. The initial bid opening was held on May 11, 1999. Subsequent offerings will be held the second Tuesday of each month. Questions regarding the sale of titanium sponge should be directed to Caitlin O'Leary (703) 767-6753. (Defense National Stockpile Center, 1999).

Specialty metals producer Allegheny Ludlum Corp. announced the addition of titanium to its product lines. Allegheny Ludlum is a part of Allegheny Teledyne Inc. As a producer of plate, Allegheny Ludlum increases Allegheny Teledyne's presence in the titanium industry. Allegheny Teledyne companies associated with titanium industry now include Allvac, Oremet-Wah Chang, Titanium Industries Inc., and Rome Metals Co. (Allegheny Ludlum, 1999).

Pigment

The privately held chemical company, Huntsman Corp., plans to acquire four businesses from Imperial Chemical Industries P.L.C. (ICI) including ICI's Tioxide titanium dioxide pigment operations in North America, Europe, and South Africa. Huntsman will acquire ICI's businesses through a new company, Huntsman ICI Holdings, to be established in partnership with ICI for that purpose. The transaction is subject to certain conditions, including approval by ICI shareholders. Tioxide is the third largest producer of titanium dioxide pigment with about 600,000 tons of the world's 4.5 million tons of annual capacity (ICI Group, 1999).

Notice

Excluding prices, the data in this publication have been rounded to three significant figures.

References Cited

African Mineral Services, 1999, Anglo-committed to Africa: African Mineral Services, April, no. 4.04, p. 1-2.

——— 1999b, Richards Bay Minerals, African Mineral Services: April, no. 4.04, p. 6.
Allegheny Ludlum, 1999, Allegheny Ludlum press release, March 31, 1 p.
ICI Group, 1999, ICI Group press release, April 14, 1 p.
RTI International Metals Inc., 1999, RTI International Metals Inc. press release, April 9, 1 p.
Titan Mining LLC., 1999, Titan Mining LLC press release, April 5, 2 p.
Defense National Stockpile Center, 1999, Defense National Stockpile Center press release, April 2, 1 p.

TABLE 1
COMPONENTS OF U.S. TITANIUM METAL SUPPLY AND DEMAND 1/

(Metric tons)

	1998					1999
	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter 2/
Production:						
Sponge	W	W	W	W	W	W
Ingot	16,200	14,300	13,500	11,300	55,200	10,200
Mill products	8,920	8,860	7,720	6,540	32,000	6,590
Exports:						
Sponge	170	71	37	69	348	13
Scrap	2,180	2,230	1,630	970	7,010	1,190
Ingot, slab, sheet bar, etc.	864	901	771	548	3,080	306
Other unwrought	381	87	135	188	791	73
Bars, rods, profiles, and wire	474	410	508	623	2,010	371
Other wrought	869	875	1,110	935	3,780	630
Total	4,930	4,580	4,190	3,330	17,000	24,600
Imports:						
Sponge	4,220	2,910	2,760	1,020	10,900	156
Waste and scrap	2,580	2,830	2,550	1,800	9,770	798
Ingot, billet	741	627	273	598	2,240	365
Other unwrought	84	139	118	69	410	14
Articles of titanium	276	252	91	126	744	76
Other wrought (mill products)	963	904	661	626	3,160	428
Total	8,870	7,670	6,460	4,230	27,200	1,840
Stocks, end of period:						
Sponge, Government	33,000	33,000	31,700	31,700	XX	31,700
Sponge, Industry	7,340	10,100	8,750	10,600	XX	10,300
Scrap	14,200	13,900	13,700	13,700	XX	13,600
Ingot	4,260	4,240	3,900	4,050	XX	4,580
Total industry	25,800	28,200	26,300	28,400	XX	28,400
Consumption:						
Sponge	9,440	8,060	7,560	4,080	29,100	5,500
Scrap	8,290	7,880	7,780	4,990	28,900	5,110
Ingot	13,300	11,500	10,900	9,520	45,200	11,200
Mill products (net shipments):	7,290	7,390	6,120	5,270	26,100	5,500
Forging and extrusion billet	3,270	3,040	2,280	1,850	10,400	1,830
Rod and bar	821	939	816	711	3,290	657
Other 3/	3,200	3,410	3,020	2,710	12,300	3,010
Castings (shipments)	338	227	167	176	908	154

W Withheld to avoid disclosing company proprietary data. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Imports and exports for first quarter 1999 include January and February only. March 1999 data were not available at time of publication. Production and consumption data are for full quarter.

3/ Data for sheet and strip, plate, fastener stock and wire, extrusions (other than tubing), pipe and tubing, and other have been combined to avoid disclosing company proprietary data.

TABLE 2
COMPONENTS OF U.S. TITANIUM DIOXIDE PIGMENT SUPPLY AND DEMAND 1/

(Metric tons)

	1998					1999
	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter
Production	337,000	350,000	326,000	315,000	1,330,000	320,000
Imports 2/	43,900	51,400	53,400	51,100	200,000	NA
Exports 3/	106,000	112,000	93,000	87,300	398,000	NA
Stocks, end of period	115,000	105,000	108,000	96,900	XX	122,000
Apparent consumption 4/	267,000	299,000	284,000	290,000	1,140,000	NA

NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Based on Harmonized Tariff Schedule of the United States (2823.00.0000, 3206.10.0050, and 3206.10.0010).

3/ Based on Harmonized Tariff Schedule of the United States (2823.00.0000 and 3206.10.0000).

4/ Apparent consumption = production + imports - exports - stock increase or + stock decrease.

Source: Bureau of the Census.

TABLE 3
U.S. EXPORTS OF TITANIUM PRODUCTS 1/

(Metric tons)

	1998					1999
	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date	January- February
Metal:						
Unwrought:						
Sponge	170	71	37	69	348	13
Scrap	2,180	2,230	1,630	970	7,010	1,190
Billet	245	127	130	41	543	20
Blooms and sheet bars	478	601	521	413	2,010	177
Ingot	141	173	120	94	528	109
Other unwrought	381	87	135	188	791	73
Wrought:						
Bars, rods, profiles, and wire	474	410	508	623	2,010	371
Other	869	875	1,110	935	3,780	630
Ores and concentrates	56,300	1,220	1,480	795	59,700	999
Oxides	10,700	12,000	8,820	10,700	42,200	6,610
Pigments	95,800	99,600	84,200	76,600	356,000	46,900

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM METAL 1/

(Metric tons)

	1998					1999
	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date	January- February
Unwrought:						
Sponge:						
China	62	--	--	--	62	--
Japan	863	438	701	657	2,660	67
Kazakhstan	180	437	45	105	767	--
Russia	3,100	2,020	2,010	233	7,360	69
Other	15	18	10	20	63	20
Total	4,220	2,910	2,760	1,020	10,900	156
Waste and scrap:						
Canada	48	26	51	79	204	60
France	437	340	241	189	1,210	89
Germany	21	105	89	17	232	37
Italy	229	333	281	173	1,020	45
Japan	512	707	874	492	2,590	237
Russia	457	253	229	103	1,040	--
United Kingdom	656	758	545	481	2,440	235
Other	224	311	241	263	1,040	95
Total	2,580	2,830	2,550	1,800	9,770	798
Ingot and billet:						
China	59	94	143	52	348	70
Russia	513	485	110	521	1,630	263
United Kingdom	121	--	1	21	143	32
Other	48	48	19	4	119	--
Total	741	627	273	598	2,240	365
Powder	67	28	43	8	147	4
Other 2/	17	111	75	61	264	10
Wrought:						
Articles of titanium:						
Castings	1	1	1	1	3	1
Other	275	251	90	125	741	75
Other wrought (mill products):						
Bars, rods, profiles, and wire	244	282	116	147	789	70
Plates, sheets, strips, and foil	587	505	476	431	2,000	302
Tubes and pipes	3	63	13	19	98	9
Other	129	54	56	29	268	47
Total mill products	963	904	661	626	3,160	428

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes blooms, sheet bars, slabs, and other.

Source: Bureau of the Census.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM CONCENTRATES 1/

(Metric tons)

	1998					1999
	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter
Ilmenite:						
Australia	95,600	37,900	58,200	85,200	277,000	81,400
India	20,000	30,000	--	--	50,000	--
Ukraine	26,100	--	26,000	--	52,100	25,400
Other	--	--	--	--	--	100
Total	142,000	67,900	84,300	85,200	379,000	107,000
Titanium slag:						
Canada	35,200	25,400	5	42,500	103,000	30,600
Norway	21,000	--	20,000	--	41,000	10,000
South Africa	120,000	88,000	128,000	145,000	481,000	63,900
Other	--	--	832	--	832	--
Total	177,000	113,000	149,000	187,000	626,000	105,000
Rutile:						
Australia	19,500	14,400	28,000	22,700	84,500	14,400
South Africa	29,300	39,200	56,900	16,000	141,000	35,900
Ukraine	--	--	--	10,000	10,000	--
Other	184	5,070	5,040	21	10,300	12
Total	48,900	58,700	89,900	48,700	246,000	50,300
Synthetic rutile:						
Australia	20,100	39,400	51,900	15,000	126,000	30,600
Malaysia	1,140	1,140	366	1,570	4,220	1,140
Ukraine	--	--	54	180	234	36
Other	--	--	23	9,850	9,870	--
Total	21,200	40,600	52,400	26,600	141,000	31,800
Titaniferous iron ore:						
Canada	540	9,920	13,500	(2/)	24,000	75

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM PIGMENTS 1/

(Metric tons)

	1998					1999
	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date	January- February
80% or more titanium dioxide:						
Australia	475	128	1,490	637	2,730	581
Belgium	370	634	1,970	306	3,280	572
Canada	14,800	21,800	19,400	18,100	74,000	11,800
China	579	796	986	603	2,960	694
Finland	208	228	297	336	1,070	258
France	580	418	2,120	1,890	5,010	793
Germany	7,110	6,220	6,500	7,060	26,900	3,650
Japan	1,290	1,500	2,310	2,160	7,260	1,410
Norway	3,200	2,430	2,580	1,540	9,760	564
Poland	160	120	120	100	500	200
Singapore	1,110	886	1,040	617	3,650	381
Slovenia	268	1,070	959	479	2,780	441
South Africa	35	36	1,440	1,660	3,170	600
Spain	45	129	1,480	3,210	4,860	2,010
Other	193	683	1,110	1,950	3,940	1,420
Total	30,500	37,000	43,800	40,600	152,000	25,300
Other titanium dioxide:						
Canada	273	412	734	678	2,100	467
France	1,410	2,470	522	5	4,400	4
Germany	333	177	127	108	745	61
Italy	653	917	52	19	1,640	3
South Africa	1,660	2,210	636	--	4,510	--
Spain	2,210	2,000	327	13	4,550	--
United Kingdom	581	612	522	491	2,210	122
Other	478	357	582	626	1,940	284
Total	7,600	9,160	3,500	1,830	22,100	941
Titanium oxide:						
Australia	--	--	--	2,400	2,400	1,470
Belgium	622	655	681	658	2,620	434
China	507	850	356	844	2,560	567
Czech Republic	493	439	311	309	1,550	313
France	2,530	1,940	2,760	2,900	10,100	2,490
Germany	760	225	199	339	1,520	168
Other	960	1,070	1,820	1,180	5,030	775
Total	5,870	5,170	6,130	8,630	25,800	6,220
Grand total	43,900	51,400	53,400	51,100	200,000	32,500

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 7
PUBLISHED PRICES OF TITANIUM MATERIALS

(End of period, first quarter 1999)

Specification of material	Range
Ilmenite, per metric ton:	
F.o.b. Australian ports	\$82 -- \$91
Titanium slag, per metric ton: 1/	
80% TiO ₂ , Canada	307
85% TiO ₂ , South Africa	377
Rutile, per metric ton:	
Natural:	
Bagged, f.o.b. Australian ports	490 -- 530
Bulk, f.o.b. Australian ports	435 -- 465
Sponge metal, per pound:	
Estimated, domestic	4.25 -- 4.50
Titanium scrap, per pound:	
Turnings, unprocessed (Ti-6Al-4V)	.40 -- .45
Ferrotitanium, per pound:	
70% (max. 4.5% Al) per pound Ti	1.28 -- 1.35
Titanium dioxide pigment, per pound:	
Anatase, f.o.b. U.S. plants, list price	.92 -- .94
Rutile, f.o.b. U.S. plants, list price	.99 -- 1.02

1/ Estimated based on U.S. imports for consumption.

Sources: American Metal Market, Chemical Market Reporter, Industrial Minerals (London), Platt's Metals Week, and industry contacts.